AMENDMENTS TO THE SPECIFICATION

On page 5, please amend the first paragraph beginning at line 3 as follows:

First, the process of the idea which resulted in the present invention is explained. As described in the section of the Background Art, the amount of the nonlinear effect when the spectral width of pump light is expanded using the nonlinear effect in a pre-fiber can be expressed approximately by a formula (1):

$$(\gamma / \alpha)^{2} \cdot (P_{in} - P_{out})^{2} \quad \cdots \quad (1)$$

where, γ is a nonlinear coefficient, α is the transmission loss of a pre-fiber, P_{in} is the power of light which is input into the pre-fiber, P_{out} is the power of light which is output from the pre-fiber. In Literature 1, a Non-zero Dispersion-shifted Fiber (NZ-DSF) is used for the pre-fiber, and γ is about 4 $W^{-1}km^{-1}$, α is 0.3 dB/km in the line 1.45 μm band. If the value of γ / α is large when P_{in} and P_{out} are constant, great nonlinear effect is obtained. In the example of Literature 1, γ / α is ~~131~~ 13 $W^{-1}dB^{-1}$.

On page 5, please amend the paragraph beginning at line 16 and ending at page 6, line 2, as follows:

In contrast, in the case of a high non-linearity fiber (HNLF) in which the relative refractive index difference between a core and a cladding is about 2.9%, the sectional area of effective mode in the base mode is 11 μm^2, the zero dispersion wavelength is 1491 nm, and the dispersion slope is 0.04 $psnm^{-2}km^{-1}$, it is possible to achieve γ of about ~~201~~ 20 $W^{-1}km^{-1}$, and α of 0.8 dB/km in the 1.45 μm band. In this HNLF, γ / α is ~~251~~ 25 $W^{-1}dB^{-1}$, and if a fiber having a length of 8 km is used, in which P_{in} and P_{out} becomes equal to those of Literature 1, nonlinear effect which is as much as nearly 4 times that of Literature 1 can be obtained.

Please amend the paragraph bridging pages 9 and 10 as follows:

It is preferable that the Raman amplifier be structured such that the relationship of γ / α>~~131~~ 13 $W^{-1}km^{-1}$ is satisfied when the nonlinear coefficient of the optical fiber 26 is γ ~~$W^{-1}dB^{-1}$~~ $W^{-1}km^{-1}$ and the transmission loss is α dB/km. In such case, greater nonlinear effect can be obtained under input/output conditions similar to those of the technique described in Literature 1. In the present embodiment, a HNLF in which γ / α is ~~251~~ 25 $W^{-1}dB^{-1}$ is used as the optical fiber 26, and the zero dispersion wavelength is 1491 nm.